

# Innovation, NCLB, and the Fear Factor

## The Challenge of Leading 21st-Century Schools in an Era of Accountability

LaTefy Schoen

Lance D. Fusarelli

*North Carolina State University, Raleigh*

This article explores the impact of the No Child Left Behind Act (NCLB) on the behavior of teachers and school leaders, specifically the centralizing, standardizing tendencies of the legislation, and juxtaposes their reactions to the types of teaching and leadership required to lead 21st-century schools. The authors argue that the isomorphic behavioral responses to NCLB conflict with the pedagogical and leadership behaviors of the 21st-century schools movement. The authors conclude that unless modifications are made to the legislation, teachers and school leaders are unlikely to exhibit or promote the types of pedagogical skills, knowledge, or leadership envisioned by advocates of 21st-century schools.

**Keywords:** *No Child Left Behind; politics of education; accountability; 21st-century schools; innovation; centralization*

Today's school leaders are faced with multiple calls for change, improvement, and reform. These calls take many forms based on the value preferences of the organization, think tank, or legislator. Prominent among the rhetoric for change is the demand for schools to revise teaching and learning methods and curricular foci to meet the needs of an information-based society, i.e., creating "21st-century schools" (Carnegie Council on Adolescent Development, 1989; Carnegie Forum on Education and the Economy, 1986; Schlety, 2001). However, another popular approach to improving schools involves requiring schools to become more accountable to the public for student performance. This is the impetus behind the No Child Left Behind Act (NCLB), which requires states to monitor and improve student subgroup performance and issue publicly accessible report cards for all schools.

This research juxtaposes the core concepts of the 21st-century schools movement with the tenets of NCLB and discusses how educators resolve the competing tensions generated by the reforms, particularly at the school level. We consider whether these two reform approaches are incompatible, or whether it is possible to make progress in both arenas. The intent is not to provide a comprehensive overview of NCLB, nor of the 21st-century schools movement, but rather to highlight select aspects that relate to the politics of reform, especially involving the dynamic tension between fear and innovation in schools.

The pressing need to be innovative and to prepare students with 21st-century skills while complying with and meeting the many mandates of NCLB creates tension among school leaders and teachers who feel as though they are being pulled in opposite directions. Many conscientious school leaders are trying to be simultaneously responsive to calls for innovation, critical thinking skills, adaptability, and creativity (21st-century skills) yet still meet the demands and adequate yearly progress (AYP) testing targets of NCLB. The ever-present threat of failing to make AYP, with its public embarrassment, stigma, and outcomes-or-else philosophy, produces fear and conformity among educators—both of which stand in stark contrast to the objectives of 21st-century schools (Brown, 2007).

Oddly, pronouncements by federal education officials and official NCLB publications are replete with references to “meeting the challenge of a changing world” by “strengthening high schools for the 21st century” and ensuring that students have “practical problem solving skills” (Spellings, 2007; United States Department of Education [USDOE], 2006). The Blueprint for Strengthening NCLB proposed by President Bush suggests that these goals will be met primarily through providing more rigorous coursework, hiring science and math professionals to serve as adjunct teachers, using scientifically proven methods of instruction, and continuing to hold schools accountable for results (USDOE, 2007). NCLB retains an emphasis on hiring highly qualified teachers, but little is said about high-quality instruction. In fact, one might read into the call for the employing of science and math professionals that pedagogical concerns like instructional methods and materials are unimportant. The Blueprint alludes to training teachers in scientifically proven methods, but stops short of defining what this means.

A decade ago, the American Psychological Association (APA, 1997a) issued a set of learner-centered psychological principles to guide educational reform efforts. This document was followed by an interdisciplinary document dealing with identifying high-quality educational innovations and bringing them to scale (APA, 1997b). These publications stress the importance of

high-quality learning environments characterized by student engagement in constructing meaning through interactive problem solving. The APA recommendations emphasize the importance of instructional methods and materials in reforming PreK–12 schools; however, these research-based guidelines have been virtually ignored by politicians and supporters of NCLB. Instead, NCLB focuses on teacher quality and testing the traditional curriculum of the 20th century, without regard for new competencies required for 21st-century schools. By contrast, the 21st-century skills movement seeks to fundamentally restructure classroom learning experiences through student exposure to more authentic activities such as collaborative interdisciplinary problem solving and places less emphasis on teaching and testing subject area skills in isolation (Huber & Breen, 2007; Newmann & Wehlage, 1995). The fundamental difference in these reforms is that 21st-century skills proponents advocate a focus on the contexts for learning, and NCLB proponents emphasize the content of learning through standards-based teaching and testing (Brown, 2007).

The impetus for the 21st-century skills approach of fostering creative and innovative thought in schools results from the application of business principles and economic goals to educational settings (Christensen, 1997; Christensen & Raynor, 2003). Although little if any research has been done in K–12 school settings detailing exactly what these learning environments might look like, it has been suggested that they resemble Dewey's (1938) idea of productive inquiry where students collaborate and learn from trial and error and discussion (Brown, 2006). This active learning methodology is being implemented in several contexts with promising results. In higher education, MIT's Technology Enabled Active Learning (TEAL) Project has been used successfully since 2005 to instruct introductory physics students using hands-on desktop experiments to create a rich learning experiences in a collaborative studio setting. This approach represents a stark departure from the traditional approach of teaching introductory physics via lecture followed by tests of lecture content. Active learning methods such as those employed in the MIT TEAL Project offer a viable option reforming PreK–12 contexts through focusing on better learning experiences for students (Bonwell & Eison, 1991). However, opponents stress that active learning techniques work best in nonintroductory phases of learning (Kirschner, Sweller, & Clark, 2006).

The 21st-century schools movement is rooted in constructivist approaches to educational reform that increasingly have gained acceptance internationally (Gredler, 1997; Vygotsky, 1978). In the 1990s, Finland's educational system underwent a fundamental transformation from strict national control over structure, organization, content, resources, and methods to a more flexible

and decentralized approach. The shift in control was accompanied by a greater emphasis on teacher professionalization through upgrading teacher preparation standards and allowing for greater teacher autonomy over course content, assessment practices, course offerings, texts, school policy, and budget (Institute for Educational Research, 2002). A strong background in cognitive psychology was required for all preservice teachers and graduate programs in all curricular areas. In 2000 and 2003, the Paris-based Organization for Economic Cooperation and Development (OECD) conducted an international comparative study of educational systems through its Program for International Student Assessment (PISA). The PISA studies investigated educational systems and outcomes in 32 industrialized countries; the goal was to test and compare school children's performance across the world, with a view to improving educational methods. The PISA studies assessed the ability of 15-year-old students to use knowledge and skills to solve real-life challenges, rather than looking at the extent to which they had mastered a particular curriculum. The test addressed literacy in reading, math, and science and required students to master processes and apply knowledge in different authentic situations. Finnish scores were consistently strong and arguably the highest in the industrialized world, with Japanese and Korean students also performing well. As for American students, then U.S. Secretary of Education Rod Paige commented, "Unfortunately, we are average across the board compared to other industrialized nations" (Lyne, 2001). The Finnish Ministry of Education sponsored a report from researchers at the University of Jyväskylä explaining the Finnish success on PISA (Institute for Educational Research, 2002). The Finns attribute their success to a web of interrelated factors including greater teacher professionalization, high teacher autonomy, an emphasis on cognitive psychology in teacher preparation, a shift toward less structured curricula, and active learning methods among other broader elements of society (e.g. family values, homogeneous students, and cultural elements).

Many educational leaders have praised the study's approach. Gary Phillips, spokesman for National Center for Education Statistics, stated, "What makes PISA unique is its broad focus on literacy, rather than specific curricular knowledge" (Lyne, 2001, p. 1). Unlike NCLB's current approach to assessment of learning, PISA resists the tired model of curriculum testing; instead, it assesses whether students nearing the end of compulsory education have the knowledge and skills needed for full participation in society. This is similar to what many have referred to as 21st-century skills. We assert that American students and society would benefit from rethinking the way we assess learning.

The business management and organizational sociology literature on innovation makes it clear that the development of innovation is highly dependent on flexibility and autonomy in the environment of those who are trying to innovate. Some evidence suggests that approaches associated with NCLB reforms, although admirable, place competing sets of demands on teachers and schools by simultaneously implementing standardized, routinized high-stakes testing while expecting schools to turn out students who are creative thinkers and real-world problem solvers.

## **The 21st-Century Schools Movement**

The 21st-century schools movement is an effort by educators, business leaders, and policy makers to inculcate children with the essential skills necessary for success in a rapidly changing, technology-driven society. Chief among these changes is the manner in which business is conducted and the types of knowledge that are required for success in the workplace. Business and industry leaders find themselves immersed in global markets in which products, processes, services, delivery systems, production mechanisms, and internal and external communications are rapidly evolving. There is a dire need for a new type of employee who understands systems thinking, can work collaboratively, is flexible, innovative, resourceful, and able to access and apply new information to solve complex problems. This is the “product” in demand from the educational systems in the 21st century. The challenge from this perspective is to work backward from this desired outcome to design educational systems that produce students who exhibit these competencies.

## **Skills Required in 21st-Century Schools**

What skills do students need to possess to succeed in the 21st century? The Partnership for 21st Century Skills, an advocacy organization focused on bringing together the business community, education leaders, and policy makers to change educational practice, asserts that “as much as students need to learn academic content, they also need to know how to keep learning—and make effective and innovative use of what they know—throughout their lives.” The partnership defines 21st-century learning and thinking skills as

- critical thinking and problem solving skills
- creativity and innovation skills
- collaboration skills

- information and media literacy skills
- contextual learning skills

Advocates of 21st-century skills, including TedSizer's Coalition for Essential Schools and the Carnegie Institute for the Advancement of Teaching, assert that in this century society needs a new kind of graduate who is more creative and innovative than was required of graduates in the past. Rather than having a static body of knowledge, it is now more valuable to have employees who can utilize resources to acquire knowledge from a variety of sources and use the information to address work-related issues. New competencies and dispositions are needed to successfully navigate a rapidly changing world. A demand exists for individuals with technological savvy, keen communication and observation skills, and analytical ability who possess an attitude of informed adaptability. Little has been written about the types of environments necessary to support this kind of thinking, especially from an organizational perspective, but psychological research in the area of creativity (Zhou, 2003) and business management literature on innovation (Christensen, 1997; Christensen & Raynor, 2003) suggest that high-challenge/low-threat working conditions support divergent thinking. In particular, it is believed that close oversight reduces creativity and innovativeness. This has important implications for planning classroom learning experiences, as well as managing the work environments of teachers. Indeed, one of the lessons learned from the North Carolina Teacher Working Conditions Study was that a strong relationship exists between teachers' working conditions and student learning (Center for Teaching Quality, 2006). Findings from the North Carolina Teacher Working Conditions Study indicate the importance of professional collegiality, time for teachers to meet and plan together, and time to understand each individual student (Hirsch, Emerick, Church, & Fuller, 2006).

## **Content, Curriculum, and Instruction in 21st-Century Schools**

Some have suggested that the methods necessary to support such schools would resemble those of the progressive era of American education, in which philosophers such as Dewey (1899; 1938) stressed learning by doing, a hands-on socially interactive approach to learning that focused on real-world experiences. Modern adaptations of this philosophy include proponents of social cognitive constructivism, problem-based learning, and active learning (APA, 1997a; Bonwell & Eison, 1991; Vygotsky, 1978). Proponents

such asSizer and Sizer (1999) assert that in an information-based society teachers must be able to employ constructivism and teach students to use their minds well rather than attain mastery of a static body of knowledge. The following quote from the Coalition of Essential Schools Web site (Sizer, 2007) highlights the aims of education from a constructivist perspective:

The curriculum should emphasize thoroughness and depth over breadth of coverage, with an aim of developing habits of mind such as inquiring into causes, seeing from multiple perspectives, and applying learning to new situations. The curriculum should be flexible and individualized enough to allow for independent exploration. For teachers to achieve these aims, we believe that it is crucial to build professional learning communities in which they share practices and build upon one another's knowledge and skills.

However, the constructivist movement has had its critics, particularly conservatives. Critics believe that a curriculum that stresses depth over breadth of knowledge will result in students who do not possess essential core knowledge of "the basics." The flexible and context-specific nature of constructivism means that there are many concepts to which students will not be exposed. In addition, such approaches do little to quell the frustrations of those who believe that education is in need of greater oversight. Reforming schools from this paradigm is more a matter of setting standards, monitoring the success or failure of schools, and consistently applying consequences for those who do not meet the standards. From this positivistic perspective, the constructivist approach to curriculum and instruction is anything but standardized, rendering comparisons based on standardized testing for content mastery virtually impossible. Therefore, there is no easy means of monitoring or comparing performance. Differences between the positivistic paradigm of NCLB and the constructivist paradigm exemplified in the 21st-century schools movement are highlighted in Table 1. For contrast, we now examine the basic principles of NCLB.

## **NCLB, Standards, and Accountability**

In the latter portion of the 20th century, numerous national reports condemned American education for its failure to produce significant numbers of students who achieved high scores on standardized measures of core subjects such as mathematics and science (National Commission on Excellence in Education, 1983). Provocative reports of the shortcomings of American schools fueled widespread public concern; the quality of education became

**Table 1**  
**Contrasting Reforms: 21st-Century Schools Movement**  
**and No Child Left Behind**

	21st-Century Schools Movement	No Child Left Behind
Aims of education	Graduates who are innovative thinkers and problem solvers	Graduates who demonstrate proficiency in basic skills
Epistemological roots	Cognitive constructivism	Logical positivism
Driving forces	Business and industry, especially high-tech fields	Politicians, civil rights activists
Assumptions about educators	Teachers are professionals. Reform will be achieved by greater teacher knowledge and skills in instruction and by focusing on the individual student.	Educators have been unsuccessful in their efforts to date. Rigorous monitoring and holding schools accountable for results is necessary to improve education.
Locus of control over change	Designing and monitoring of change is handled internally by the school system.	Design and monitoring of change is conducted by the state.
Type of accountability stressed	Internal accountability of those within education to hold each other responsible for executing "best practices."	External accountability of educators to answer to those outside of education for the results of schooling.
Implications for teachers	Must learn new ways of teaching and must receive ongoing professional development; must master new technologies.	Must insure that all students master basic skills in the core curriculum; content knowledge is more important than special interests or creativity.
Curricular implications and reactions	More flexibility in content, pacing, and methods; thinking skills emphasized over preset content; divergent (creative or out-of-the-box) thinking is valued.	Content is standardized, breadth of coverage is important, so pacing charts are needed to insure all tested content is addressed; convergent thinking (correct answers) is valued.
Affiliated methods and materials	Learning involves less traditional teacher-directed instruction and is more interactive, interdisciplinary, and personal; learning centers around using technology and available resources to acquire and apply information to solve problems or create products.	Teachers rely on published texts or curriculum guides; technology is often used to drill students and monitor mastery. Little creativity or project-based learning is done because of time constraints imposed by pacing charts associated with a standardized curriculum.



Advantages for students	Learning is individualized; student interest and engagement tends to be higher; relationship of knowledge to the real world is more apparent; collective learning and development of social skills is emphasized; students gain more experience with divergent creative and innovative thought.	Test scores and school report cards assure students, parents, and employers that graduates have had exposure to and mastered the standard course of study. Reporting achievement of subgroups promotes greater attention to students from traditionally underserved groups.
Disadvantages for students	Students may not be exposed to as many topics as they would in the traditional curriculum, possibly putting them at risk for lower scores on standardized tests.	Students may suffer from lack of interest or have trouble retaining information that is presented in isolation. Students may lack creativity and analytical ability.
Societal benefits	Future generations are more collaborative, open to new ideas, proficient in new technologies, think creatively and use resources to solve problems and innovate.	Graduates master a set of core concepts which include basic skills and knowledge in standard subjects. Society has a large pool of employees who have met or exceeded minimum standards.
Drawbacks for Society	There is no standard course of study, nor common core of knowledge or skills, thus making it hard to judge what students actually know. It is difficult to compare the quality of PreK–12 school experiences.	Graduates possess static knowledge that worked well for the 20th century, but they lack the resourcefulness, analytical ability, and innovativeness to contribute meaningfully in a global world.
Measures of success	Student achievement is demonstrated through “authentic” means such as completing complex projects, performances, or demonstrations, which are collected in portfolios. Subjective judgment and scoring rubrics are used to ascertain competence on an individual basis.	Student achievement is demonstrated primarily through standardized test scores, tied to the standard course of study.

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a major political issue in state and national elections. As the 20th century came to a close, the idea that some children were trapped in failing schools caused a demand for greater public awareness of which schools were failing and the creation of alternatives (both public and private) for parents with

children in these schools. The push for greater accountability and school choice culminated in the passing of NCLB in 2002.

Among the many federal mandates associated with NCLB is the requirement that statewide testing programs be set up for the purpose of issuing transparent and easy-to-read school and district report cards detailing achievement test scores of students by subgroup (ethnicity, special education, English language learners, and economically disadvantaged) at the school level. All students in grades 3 to 8 are to be tested in reading and math. Parents receive annual report cards containing student academic achievement disaggregated by subgroups, a comparison of students at basic, proficient, and advanced levels of academic achievement, graduation rates, professional qualifications of teachers, percentages of students not tested, and identification of schools in need of improvement (Fusarelli, 2004). In schools where any subgroup fails to make AYP in 2 consecutive years, all students will be given the option to transfer to another public school, either in or out of district, with transportation provided by the district. Schools failing to make AYP in 3 consecutive years are required to provide supplemental educational services (usually tutoring). State report cards displaying achievement by subgroups have raised public awareness and created a sense of urgency for educators to pay more attention to historically underserved students.

Federal officials assert that NCLB has already positively impacted education by reducing the achievement gap between middle class White students and others. The USDOE reports that since the implementation of NCLB, the gap between Black 9-year-olds and White 9-year-olds narrowed by 9 points in reading and 5 points in math. Likewise, the gap between Hispanic 9-year-olds and White 9-year-olds narrowed by 7 points in reading and 8 points in math (USDOE, 2007).

## **Content, Curriculum, and Instruction Under NCLB**

For educational leaders in the NCLB era, the central question becomes "How can we create schools in which all of our students demonstrate content mastery on standardized measures of achievement?" The reaction in most states has been a concerted effort to align and standardize the curriculum for schools, with heavy emphasis on tested subjects (J. Burns, personal communication, November 2003). NCLB has been criticized for narrowing the curriculum and encouraging teachers to teach to the test (English & Steffy, 2001; Jones, Jones, & Hargrove, 2003).

With the advent of NCLB comes a heavy reliance on achievement tests to determine educational quality, which, in turn, means that curricular content

becomes very important, often taking precedence over other important variables in the learning process such as instructional methods and materials. Most states have developed standardized curricula that coordinate with the tests used in the state accountability system. Often, these standard courses of study come with pacing guides to assist classroom teachers and school administrators to insure that all tested content is covered. Many conscientious teachers and administrators utilize these, as well as available student pretesting and tracking aides, to be sure that students are test ready. These approaches are often utilized to monitor students perceived as being at risk for low scores on achievement tests. The special attention given these students may to some extent be responsible for progress made toward closing the achievement gap.

A strong emphasis on content also highlights the need for teachers who have strong content knowledge, a rationale behind the NCLB requirement that states develop guidelines for defining what attributes constitute a highly qualified teacher and report the percentage of such teachers employed in each district and school. The quest to staff schools with individuals with strong content knowledge influences many aspects of school operations, including the assumption that because a large number of the teachers are highly qualified, funds for professional development can be diverted to support other priorities such as software packages to track student mastery, further alignment of the curriculum, or other test-related priorities. This has led to a de-emphasis on instructional methods and materials used in classrooms, teacher professionalization, and other variables often identified as indicators of high-quality learning environments. Ironically, this runs contrary to much of the research on effective schools. For example, in a 10-year study of school effectiveness, Teddlie and Stringfield (1993) found that less effective schools tended to focus improvement around more superficial activities such as teaching test-taking skills, whereas more effective schools concentrated on deeper changes in the teaching and learning process.

## **NCLB, High-Stakes Testing, and Fear**

In an effort to put some teeth in school accountability programs, states have created consequences (both positive and negative) for school districts and schools that fail to improve student achievement, such as a schedule of rewards for attaining goals (in the form of merit-pay performance bonuses for teachers and principals) or sanctions for failure to make AYP. The consequences for failure can apply at the student, teacher, school, and district levels. For example, at the student level, 22 states predicate student promotion

and/or graduation on attaining a state standard with regard to test scores (in the form of exit exams). In 2007, 43% of high school seniors in Cleveland failed to pass the Ohio Graduation Test and did not receive diplomas (Townsend & Gonzalez, 2007). At the teacher level, salary inducements may be associated with student test scores and some have even suggested using longitudinal AYP data to evaluate teachers, although this is highly controversial. At the school level, consistently low-performing schools face the public humiliation of being labeled “failing” or incompetent in local newspapers and may face state intervention, including reconstitution or closure. Districts must publish their test scores and contend with the consequences of state intervention in their schools.

These measures built into state school accountability systems elevate the stakes for educators on several levels. The greater the consequences for not attaining testing goals, the more threatening and high pressure the school or district becomes as a work environment. High-stakes environments create a single-minded focus on avoiding sanctions, accompanied by a fear to attempt anything new or untried. Fear, directly or indirectly emanating from NCLB, can become pervasive in schools and can dictate where educators are willing to invest their time and attention. The controlling power of the fear teachers can experience related to NCLB’s accountability provisions is reflected in the following statements excerpted from an author’s interview of Miss Harper, a 23-year veteran kindergarten teacher shortly following the implementation of the state and district accountability program in her district. Harper stated,

Just about all we can do anymore is teach formal lessons like reading and math. This is *kindergarten*. I wasn’t trained that way. I was taught that they need to learn through play, but not around here. The things we have to do with them now are more like first grade used to be. And we have to constantly test and document *everything*. (author interview)

She went on to say,

Teaching kindergarten used to be fun. We played games with the kids, and had [learning] centers for imaginative play like dress up or sand-play. Just about all we [the teachers] can do anymore is teach and test their checklist of skills . . . you know . . . pretty much just reading and math. Nobody cares whether it’s developmentally appropriate; they just care that the kids pass the test. I never plan fun learning activities anymore, it takes too much time. I am too afraid of getting off the pacing chart. It’s sad. School is not fun anymore, not even in kindergarten. (Schoen, 2003, p. 15)

These statements reveal how state and district accountability systems have forced fundamental changes in the way this teacher feels compelled to teach and consequently how she feels about her work. As a teacher, Miss Harper feels conflicted between what is being required of her and what she feels is right for the children she teaches. She wants to do more creative things with her students, but fears the consequences of bucking the system and being a maverick. At the time of this interview, Miss Harper stated that she was considering early retirement, primarily because of mandated changes in curriculum and instruction brought on by her district's reaction to NCLB.

Likewise, there is anecdotal evidence to indicate administrators also experience fear and high anxiety levels associated with NCLB. In a conversation with one of the authors, Mark Johnson, a high school principal in North Carolina, was asked, "Do you have any thoughts regarding whether or not NCLB causes fear in principals, teachers, or district leadership?" His response was emphatic and merits quoting at length:

Are you kidding? I've polished my resume because two segments of our population can't pass the EOC's [End of Course tests] and I'm the one who'll have the cameras and microphones in my face! Yes, NCLB and state assessment tools are a source of consternation and fear among us (teachers, building administrators, and district administrators). Here's why: (1) If the . . . teachers can't produce scores, then they panic and fear that either their jobs or what they teach will be on the line. It's unfortunate . . . teachers are reluctant to have a large percentage of special education or limited English learners in their class, because they fear their scores will likely suffer; (2) Principals know the deal. If they can't make at least expected growth, they know that they'll get beat over the heads by the superintendent about their scores. Principals are "jumping ship" left and right, trying to get out of situations where they know their scores may define their ability to lead and motivate students and teachers; and (3) District leadership gets nervous because they know that if the district is in districtwide school improvement for 3 years in a row, an overhaul could take place, meaning job loss for some folks who are comfortable in what they do. The superintendent especially is vulnerable, because he is the face of the system and has to take the hits from the school board when the "public" demands to know why the district's scores can't be like those of their neighbors. Fear? Are you kidding?!

If these anecdotes were isolated incidents, they could be easily dismissed. However, sentiments like these are being echoed across the nation by the very people who are expected to lead innovation and reform and prepare a new generation of students who can think critically and analytically and

who can function in a diverse, global society. The paradox of reliance on NCLB and high-stakes testing to reform education is that it creates a high-threat work environment for educators, conditions not favorable to the risk-taking behavior and experimentation needed to bring about change (Hagel & Brown, 2002). School leaders and teachers fearful of consequences are not highly motivated to innovate or to deviate from the tried and true. The fear factor, an unintended consequence of high-stakes testing, may ultimately inhibit the capacity of the school accountability movement to transform American education. A similar observation of the paradoxical dynamic that exists between fear and innovation has been noted in noneducation contexts. Yasmine Howard, director of Narcissus eDesign and Consulting, a private business and industry consultant firm in Australia, observed that in her experience,

[H]igh-stake environments . . . are more likely to push the idea of innovation, but are more hesitant to take on those features which would really count as innovation. My experience within some corporate environments is that they are engaged in conforming to the "status quo," and are much more interested in "proven methods." This methodology is contradictory to the nature of innovation. (Personal correspondence with author, May 2007)

### **Can Innovation and Standardization Coexist Simultaneously?**

Deming (1986, p. 94) wrote extensively on the negative effects of fear in organizations; he explained that fear not only inhibits creative thought but also causes dishonesty and competition which are counterproductive to achieving organizational goals. He maintained that fear takes a horrible toll on any organization, hurting them as individuals, and robbing them of their pride and a chance to contribute to the organization. He also stressed that from a management perspective, reliance on inspection as the sole quality control tool is a mistake, stating that, "Fear invites wrong figures. Bearers of bad news fare badly. To keep his job, anyone may present to his boss only good news."

Evidence suggests that a perceived lack of control over one's environment is associated with fear (Mineka, Gunnar, & Champoux, 1986; Mineka & Zinbarg, 2006). Creativity, widely accepted as the precursor to innovation, flourishes in loosely structured environments characterized by high challenge and low threat. Christensen (1997), Brown (2007), and other proponents of

innovation in organizations maintain that a negative relationship exists between high external control, standardization, and innovation because these situations produce high-stress/anxiety-laden work environments, which are not conducive to creative thought. These understandings about the effects of fear on people in organizations, coupled with the anecdotal evidence that NCLB causes anxiety and fear in school employees, leads us to question whether it is possible to have innovative schools in the current high-stakes accountability environment.

## Overcoming Fears and Moving Forward

Eleanor Roosevelt (1946) stated, "My greatest fear has always been that I would be afraid—afraid physically or mentally or morally and allow myself to be influenced by fear instead of by my honest convictions." On a later occasion (1960) she spoke more extensively on the importance of overcoming fear:

You gain strength, courage, and confidence by every experience in which you stop to look fear in the face. The danger lies in refusing to face the fear, in not daring to come to grips with it. If you fail anywhere along the line, it will take away your confidence. You must make yourself succeed every time. You must do the thing you think you cannot do.

What does this mean for education in the new millennium? From our perspective, facing our fears means to acknowledge that although education under NCLB has made great strides, it is still riddled with numerous perplexing and complex problems. It is time to turn to the empirical and experiential knowledge gained over the past century and utilize it to solve the issues that face us. Educators must overcome the fear of being judged harshly by outsiders and rise up and instead focus on implementing effective strategies that work. Educational leaders must move beyond the fear of being judged in the court of public opinion to do that which is known to be effective, despite skeptics. If we value innovativeness in our students, then we must take actions to create learning environments that allow this skill to develop. A proactive approach is needed to counteract the fear in schools that grips teachers and inhibits experimentation with new approaches. Fear of failure is counterproductive; instead we need new approaches to accountability that will genuinely improve learning of the skills we actually value, rather than simplistically focusing on those traditionally tested throughout the 20th century.

## **Reconciling Apparent Opposites: Balancing Standardization & Innovation**

Perhaps it is time to bridge the chasm and reconcile the apparent opposites of constructivism and standards-based accountability. We believe this is possible. The current version of NCLB favors heavy use of high-stakes testing coupled with punitive accountability. In all likelihood, mandated state testing will not diminish significantly, because of the general ideological agreement among Republicans and Democrats in their support of school accountability, coupled with a fundamental distrust among outsiders of the educational establishment and its ability to solve its own problems (Fusarelli, 2002).

NCLB may in part be responsible for improving equity if its mechanisms for reducing the achievement gap prove effective. Arguably, however, some deleterious, unintended consequences of NCLB may be that fear and frustration associated with high-stakes testing could result in higher dropout rates, greater teacher attrition, and ultimately a stifling of creativity and innovation in schools, leading to inferior teaching and learning. Testing itself has not created fear in schools, nor has school evaluation based on test scores. The aspect of school accountability that has caused the fear factor is states attaching such high stakes to test scores, creating a high-stress/high-threat work environment for teachers and school leaders. This can be extremely detrimental to any organization and has been shown to inhibit organizational innovation.

A balanced leadership approach asks, "How can we meet accountability goals without stifling innovation?" The answer lies in Eleanor Roosevelt's advice. We must face and conquer our fear and do the thing we fear we cannot. We must continue to close the achievement gap and be accountable to the public while still transforming instruction to promote greater creative problem solving in our students. It's patently absurd to think that 21st-century skills cannot be accurately measured and tested. Doing so, however, requires some fundamental changes in our approach to accomplish this; more of the same will not be sufficient.

A two-pronged approach may prove instrumental in crossing the present impasse and maintaining the integrity of NCLB while overcoming the negative effects of fear at the school level. First, educational leaders at the district and state levels must re-examine the aspects of school accountability systems that are threatening to educators. Schools should be encouraged to focus improvement efforts and professional development on consistently delivering high-quality instruction rather than on content coverage and pretesting. Good teachers and effective school leaders have always done this—regardless



of their philosophical and pedagogical orientation. Poor teachers and unimaginative school leaders, on the other hand, follow the path of least resistance and mindlessly drill and kill. In their research on effective schools, Teddlie and Stringfield (1993) noted that ineffective schools tend to place a superficial emphasis on test-taking skills, but more effective schools were characterized by better instructional processes. State testing systems must be revamped and reworked to more accurately measure 21st-century skills. Greater federal flexibility in use of funds would facilitate this process.

Removing some of the high stakes from school accountability would also lessen the fear factor and make innovation more likely. Educators respond more to rewards than punishment. Accordingly, policy makers need to improve incentives by offering educators a range of rewards (recognition, commendations, and merit bonuses) to increase motivation and relieve some of the anxiety of school-based educators. Enabling the Nation and states to increase teacher professionalism may help insure better instruction, resulting in higher achievement and less educator stress. For example, increasing funding to states to provide substantial salary supplements for teachers who attain national board certification or who significantly improve student performance promotes organizational effectiveness without inducing fear.

Another approach involves starting with the end in mind. It is possible to make accountability less stressful by reconsidering assessment guidelines to embrace more learner-centered principles. Tests of cognitive abilities that require application of basic skills to solve problems may remove pressure from teachers, principals, and district leaders who presently feel compelled to cover skill checklists in a standardized curriculum. This allows for a relatively objective and comparable measure of success while allowing teachers to concentrate on developing critical thinking skills in individual learners rather than on wholesale group coverage of a set of arbitrary skills. Redesigning assessments would involve establishment of test guidelines and approval of state tests used in conjunction with NCLB. This is not particularly cumbersome on a national level, but would require extensive revisions at the state level. In conjunction with this change, if testing systems are realigned to more effectively measure and assess 21st-century skills, educators should be rewarded for using whatever methods and approaches are most effective with their students, whether through constructivism, traditional (back-to-basics) methods, or something else altogether.

Policy makers must revise the current system so that it encourages teacher professionalism and provides strong internal accountability coupled with existing external accountability mechanisms. We suggest a more balanced approach to reform that embraces core aspects of both worldviews. Although

some may find these proposals controversial, we believe they provide the best opportunity to move education from the present level of marginal success to deeper, more substantial and lasting educational reform.

## **Turning NCLB Inside Out by Embracing Student-Centered Principles**

### **Reconsidering the Meaning of AYP**

Revising NCLB could do much to reduce the fear factor in schools and promote greater innovation and more individualized approaches to student learning. Specifically, there is a need to reexamine the way AYP is defined and measured. Currently, the data are aggregated at the grade or course level and one group's scores are compared to the scores of the students who took the test the previous year. This places the focus on the school faculty and how they perform from year to year. Not only is this a high threat approach, it is fraught with problems, such as varying student ability levels from year to year and other uncontrollable variables.

A better approach would be to focus on student learning by implementing a student tracking approach and redefining AYP as the progress or growth students make from year to year in core content areas. The obvious difficulty of this growth or value-added model is the lack of continuity in subjects studied from year to year, especially in high school. For example, in mathematics some might argue that there is very little commonality between the algebra studied one year and the geometry studied the next or in science between physical science and biology. This realization brings us to the second major strategy: revising mandated assessments to measure applied knowledge and thinking skills over content in isolation.

### **Designing Better Tests**

NCLB should incorporate language that forces a critical analysis of the type of assessments currently used by states to measure student learning. This gets to the very heart of the question of what type of knowledge and skills are valued by society. Currently, most tests used today focus on mastery of preset content. Is there a real need for a minimum skills approach like this? Is there truly an identifiable set of facts students need to know to be successful in this century? Or would the better approach be to focus on accessing and applying information to solve complex problems? A set of national guidelines for the selection or creation of assessments that focus more on thinking

skills and processes than on content would go a long way toward sparking instructional reforms that promote creative and innovative thought in students.

Rather than structuring accountability around how well schools get students to master tested content, a new improved version of school accountability could focus on how well schools are able to spark in-depth thought and focused action. Adopting guidelines for assessments that measure student thinking skills, especially in a manner that integrates core subjects, could transform the curriculum and promote more effective educational and classroom processes. Just because current forms of testing and assessment are of poor quality does not mean that high-quality assessments cannot be developed and implemented.

The re-evaluation of assessments to support greater innovation is a primary recommendation of The Partnership for 21st Century Skills. Proponents believe that the result will be more engaging classroom approaches because teachers are allowed to utilize professional judgment and are not fear bound to pacing charts, skills lists, and the pressure to “teach the test.” More imaginative and integrated instructional practices will promote the type of divergent and analytical thinking needed for success in the 21st century. More constructivist practices in the classroom will also address a number of issues faced by education such as student apathy, discipline, and drop-out rates. Why? Because students are more connected to the learning, they see why it is needed, and find the learning process more interesting, challenging, and less threatening. Similar benefits might be expected in teachers, including greater enthusiasm for their work, less absenteeism, and less staff turnover.

## **The Cost of Change**

However, revising state testing and assessment systems is not simple or inexpensive. The primary obstacle is the financing required to adopt better tests and support high-quality instruction. Not only would states have to adopt new assessment philosophies, develop or adopt measures, pilot new measures, and create new policies, but a shift toward a constructivist approach that embraces innovativeness places greater demands on teachers. There would be no place for so-called “teacher-proof” curriculum guides, but teachers would be expected and required to function on more of a professional level. This places a greater burden on schools, districts, and states to gear up for a major upgrading of professional development that would be necessary to support the demands for greater teacher professionalism and the continued acquisition of teacher pedagogical knowledge and skills.

Suggesting that states embark on such costly processes will be a hard sell, especially to poorer states, given that there is already much frustration over “unfunded federal mandates.” However, all new approaches are criticized and rejected before they are accepted. Paul C. Lauterbur, co-winner of the 2003 Nobel Prize in Physiology or Medicine wrote:

Every great idea in history has the fat red stamp of rejection on its face. It's hard to see because once ideas gain acceptance, we gloss over the hard paths they took to get there. If you scratch any innovation's surface, you'll find the scars: they've been roughed up and thrashed around by both the masses and the leading minds before they made it in to your life. (2003)

It seems expedient for proponents of reforming NCLB to enlist the help of the business community in accomplishing this monumental, but worthy, task. Corporate sponsors at the federal and state levels could be instrumental in moving this agenda along. The advantages for corporate America are obvious: the creation of a workforce that can access information and utilize a variety of sources to collaboratively solve real-world problems. Corporations could sponsor professional development for teachers that focuses on problem-based instructional methods, sponsor young inventor contests, or offer awards to teachers or schools where students display creativity and innovation in problem solving.

## Conclusion

As we approach the reauthorization process for NCLB, the country needs to reflect on the progress made and the work yet to be done. We must ascertain what our primary aims of education are, as a people, in an inclusive fashion. Determining what our country values will go a long way toward redesigning policies to achieve our goals. NCLB already provides a built-in accountability mechanism, a means for noneducators to easily monitor progress toward goals. It is the goals themselves and the underlying assumptions that we must rethink.

In the 21st century we value equity and accountability; NCLB reflects these core values. But what type of knowledge and skills do our students need? The business community has spoken; they want 21st-century skills. If we value creativity and problem solving, then we must amend our strategies so that content mastery is not the only thing we recognize and reward.

To make genuine progress at this juncture, it is necessary to adopt policies that support the best aspects of NCLB while fostering elements of

meaningful reform that have been ignored, such as fostering innovation in schools. We must resist the urge to be satisfied with proposals that stop short of achieving our goals of having equitable schools where all students learn the skills needed in a high-tech, knowledge-based society.

Perhaps the most concrete thing that can be done is to promote better classroom instructional practices by reducing the fear factor for teachers and administrators. This can be accomplished by revising state assessments used to measure success, upgrading professional development for educators, and recognizing success in meaningful ways rather than continuing to rely on punitive measures for educators who "don't measure up." Fear and innovation are indeed incompatible, but NCLB and innovation need not be.

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**LaTefy Schoen** is an assistant professor at North Carolina State University. She teaches graduate classes in educational leadership and policy and is a co-coordinator for the Innovation Leaders Academy, a training initiative through the Friday Institute of Educational Innovation in Raleigh, NC. She has 23 years of experience as a teacher, assistant principal, and educational consultant.

**Lance D. Fusarelli** is an associate professor in the Department of Educational Leadership and Policy Studies at North Carolina State University. He has written extensively on the politics of education, specifically on implementation of the No Child Left Behind Act. He co-edited (with George Petersen) *The Politics of Leadership* (Information Age, 2005).